

The Ecosystem Factor in Supporting Wiki Initiative for Knowledge Sharing in Malaysian Public Organisation

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ABSTRACT

The purpose of this paper is to highlight the significance of considering the organizational ecosystem in implementing wikis for knowledge sharing. The findings suggest that a prerequisite of an effective wiki is the appreciation of the factors that make up the organizational ecosystem; technical and organizational factors are variable elements of the ecosystem that can significantly impact the wiki; and the task of re-aligning an existing wiki taking into consideration these factors can be complex. The case study was based on knowledge sharing in a public project management organization, thereby limiting the generalizability to other organizations. Organizations which are keen to adopt wiki as part of their knowledge management initiative need to contextualize their wiki initiative within the organizational context. This research contributes to extending the knowledge-base of the factors that impact the effectiveness of wikis for knowledge sharing by linking the wiki to the broader organizational factors.

Keywords: *wiki, knowledge sharing, ecosystem factor*

INTRODUCTION

The Internet has contributed significantly to the evolution of knowledge management (KM) over the past two decades (Christina et al., 2012; [Frappaolo, 2006](#)). It has revolutionized the way information and knowledge is being disseminated and shared, often at an intensifying unprecedented pace. As a result, Internet-based web applications such as web portals, wikis and blogs have become an absolute necessity for organizations today as part of their continuing efforts to move toward long-term sustainability and growth.

Past research indicates that adoption of these Web 2.0 technologies has benefited employees and their organizations in many other ways. For instance, based on a survey conducted over 168 corporate wiki users, Majchrzak et al. (2006) found that enterprise wikis facilitated wiki users to gain enhanced reputation, while facilitating their work and subsequently enabling organizational process improvement. The popularity of wikis can be attributed to its ease of use features, an effective central repository for information and a social tool for supporting collaboration ([Grace, 2009](#)).

Notwithstanding the many successful examples highlighted in the literature, many attempts to utilize IT tools such as wikis and blogs in organizations as knowledge sharing tools have failed. In the end the wikis and blogs are reduced to just facilities providing one-way information about the organization. The failures of many organizations to capitalize on this technology-centric approach in promoting closer association among stakeholders through knowledge sharing have been studied by many researchers (Braganza and Mollenkramer, 2002; [Chua and Lam, 2005](#); Scarbrough, 2003). Common in these researchers is the finding that IT has often been perceived as the silver bullet in the success of knowledge sharing initiatives. While much research has been done on relating IT system to the organization's critical success factor (Clegg et al.,

1997; Salleh et al., 2010;), there tends to a be lack of research on the significance of the relationship of the wiki for knowledge sharing to the organizational behavior, system or culture which together makes up the ecosystem. The few that have are from Grace (2008) and Majchrzak et al. (2006) which underline the significance of the organizational ecosystem to the success of wikis for knowledge sharing indirectly.

The significance consideration of the organizational ecosystem to any organizational initiative was drawn from Corallo and Protopapa (2007) and Matthew et al. (2012). The concept of ecosystems in organization refers to the interaction, connections and the complexity of the relationships between organizations and their environment, internally and externally that shape and influence the organization toward achieving organizational goals and objectives. It was developed on the conviction that in the evolving and emerging world environment when business becomes more competitive and challenging, organizations can no longer operate with yesterday's logic, be dependent on outdated frameworks and be disengaged from their environment (Matthew et al., 2012). Applying the concept of ecosystem in organizational management stresses the similarities between organizational development and biological evolution as an organizational ecosystem functions much as a biological ecosystem does, and exhibits desirable properties similar to what one would see in nature. While the significance of the ecosystem to support wikis for knowledge sharing can be justified, the challenge of understanding the variable elements that make up the organizational ecosystem are often overlooked or undervalued.

Knowledge Sharing

Knowledge sharing has been recognized as the cornerstone of knowledge management and is considered vital to the success of any knowledge management implementation ([Alavi and Leidner, 2001](#); [Klein, 2008](#)). Upholding knowledge sharing within the organization supports to nurture sustainable competitive advantage and long term growth ([Jasimuddin, 2008](#)). By encouraging individuals within the organization to continuously acquire new knowledge, the shared knowledge itself is refined and enriched, and this tends to benefit the organization with increased value in its processes, products and services ([Yang, 2007](#)).

Knowledge sharing is a dynamic process. This involves the mutual exchange of knowledge between individuals or groups for any given purpose or objectives. As the knowledge domain changes, new knowledge is created and this can be beneficial for identifying new competencies ([Hooff et al., 2003](#); [Jae-Nam, 2001](#)). For knowledge sharing to work, it is imperative that relevant knowledge is successfully transferred at the right time and between the right people. Failing to do this will result in depreciating the value of knowledge ([Sheehan et al., 2005](#)).

There are two commonly known approaches advocated to knowledge sharing namely the process-approach and the people-approach ([Jasimuddin, 2008](#)). The process-approach perceives knowledge as an object that can easily be captured and stored; it is focused on making knowledge explicit, in the form of reports, standard operating procedures and manuals. With the advent of technologies, especially with the introduction of Web 2.0 applications, the process of information and knowledge capturing and disseminating especially explicit knowledge is getting more 'flattened' and the distribution of knowledge is becoming much faster now.

On the other hand, the people-approach is focusing more on connecting people by getting round the conventional path of sharing organizational knowledge between individuals via the traditional face to face interactions. The significance of this approach which lies in its ability to exploit tacit knowledge have seen the emergence of new concepts such as the Communities of Practice ([Lave and Wenger, 1991](#)) and After Action Review ([Alavi and Leidner, 2001](#)), which are very much in practice today.

Knowledge Management in Malaysian Public Organizations

As a result of the continuous government efforts to promote knowledge management in the public sector, the number of public agencies that have embarked on better managing of their organizational knowledge has been on the rise in recent years albeit gradually. Nonetheless, despite the commendable

efforts, research indicates that public organizations are still far behind their private sector counterparts in implementing knowledge management (Butler and Murphy, 2007; Sandhu et al., 2011; Syed-Ikhsan and Rowland, 2004). This worrying trend is highlighted in a recent study by MAMPU, a government organization responsible for overseeing technology application in the public sector, which indicates that only 12% of Malaysian government agencies have a knowledge management strategy in place (MAMPU, 2010).

It was suggested that this lack of interest is due to the non-profit nature of the public sector organizations which consequently lead to the lack of urgency in implementing the initiative. In their research Sandhu et al. (2011) and Abdullah and Date (2009) suggest five main reasons behind the lack of interest and the slow KM adoption in the public sector:

- i) Lack of awareness of knowledge management
- ii) Difficulty in building the collaborative forum in a situation of hierarchical structure
- iii) Resistance to change in knowledge sharing culture
- iv) Lack of a perception of individual benefit
- v) Lack of public private partnership

Chong et al. (2011) in their study of a KM implementation in a large public sector organization postulate that implementing such initiative in the public sector can be very demanding and quite challenging given the bureaucratic and the hierarchical nature of the sector. In addition, several barriers relating to individual, organizational and technological issues inhibit the full exploitation of knowledge management (Akhavan et al., 2005; Chua and Lam, 2005; Kim et al., 2003; Lucier, 2003). A number of studies highlight that a majority of public sector employees are more than willing to share their valuable knowledge with their colleagues, but unfortunately, due to certain individuals and organizational constraints, they could not participate actively in the knowledge sharing activities as much as they would have wanted (Sandhu et al., 2011; Syed-Ikhsan and Rowland, 2004).

In efforts to overcome these issues and to promote further adoption of KM in public organizations, MAMPU took the initiative of publishing a “Knowledge Management Blueprint” in 2010 which provides a detailed explanation of the strategies and recommendations for public organizations interested in setting up knowledge management initiatives within their organizations (MAMPU, 2010). Based on a SWOT analysis carried out during the preparation of the publication, it was revealed that several factors are preventing the public sector from benefiting from the initiative such as:

- i) A different understanding of what knowledge management is all about
- ii) Difficulty to acquire knowledge among government agencies due to the various types of format and the amount of time taken to search for the information
- iii) There is no proper way to capture the knowledge belonging to the staff who are leaving the organizations for reasons such as retirement, resignation and transfer.
- iv) Lack of knowledge sharing between organizations which lead to knowledge silos.
- v) Lack of formal procedure to encourage knowledge sharing and the absence of formal governance structure as well as recognition and rewards structure to encourage active participation from civil servants

These findings raise a major concern over the ability of the public sector organizations to optimize the use of knowledge in facilitating their employees undertaking crucial activities, especially the ones related to policy formulation and decision making processes.

The Wiki and Blog Fever

Encouraged by the plethora of knowledge management tools and techniques made available with advancements in technology especially IT, organizations today are now able to gain deeper insights and understanding of their internal and external knowledge that exist within and surrounding them. The

emergence of new forms of IT systems has provided organizations with better means of promoting knowledge sharing which extends across time and geographical boundaries ([Wagner and Bolloju, 2005](#)). The introduction of wikis and blogs have not only encouraged knowledge sharing activities, but have simultaneously helped organizational members to build communities, trust and healthy relationships.

Lured by the benefits of technologically mediated knowledge sharing tools, the Malaysian public organizations have joined the bandwagon in embracing these innovative technologies. A comprehensive assessment of 1,155 of the nation's government portals and websites highlights that 616 agencies or 56.46% gained commendable 4 and 5 star ratings which clearly indicate that the majority of the government agencies are cognizant of the full potential benefits being offered by technologies especially web portals and Web 2.0 applications (MDEC, 2011). Nonetheless, while many organizations have benefited extensively from these Internet-based web applications, many others have failed. In their study of corporate organizations that implemented knowledge management within their organizations, [Lucier and Torsilieri \(1997\)](#) posit that almost 84 percent of all knowledge management programs have not produced the expected results. Despite much effort, time and money being spent, in many instances wikis and blogs are operating in a low-key mode or left dormant.

The Wiki System

Wiki is an Internet-based collaborative authoring tool that allows anyone having the appropriate access rights to it to make contributions to the site, by adding, editing and removing its content. Underpinning wikis is the philosophy of harnessing the community collective intelligence and knowledge building. This technologically mediated communication has generated keen interest from users in society. Corporate organizations are speeding up to deploy this easy to use tool with its simplified interface and useful features which requires minimal programming skills ([Majchrzak et al., 2006](#); [Paroutis and Saleh, 2009](#)).

In addition, wiki promotes openness and transparency, facilitating effective communication and encouraging trust among people. Although some quarters have raised concerns over its potential data security risk, the possibility of vandalism and lack of face to face interaction that may affect wiki effectiveness, these issues can be tackled accordingly by having proper measures and procedures in place ([Grace, 2009](#)).

The popularity of wiki has been attributed to its advantage in providing a suitable knowledge friendly environment for deep collaboration among its users through continuous social interaction and communication. This enables users from different backgrounds who share the same interest of certain topics to come together, contribute their knowledge and experience for the benefit of others while at the same time provide individual and collective learning opportunities.

Nevertheless, albeit its popularity and ubiquitous nature, organizations which are keen to adopt wiki needs to consider putting in place well thought out strategies to increase and sustain the level of participations ([Wang and Wei, 2011](#)). These strategies must address the organizational, people, process and technology aspects accordingly. Organizations that do not support the free exchange of knowledge regardless of rank and hierarchy in its culture may find that that wiki would not work for them ([Wagner and Bolloju, 2005](#)).

The Ecosystem Factors

The emergent findings are:

- i. Lack of interest especially among the top management

At the onset, the level of support and commitment from the top management was highly visible, clear and obvious. However, due to a change in the leadership and many other pressing issues that need everyone's attention, top management interest in the wiki initiative soon dissipated. As a consequence, the task of maintaining the wiki content was left to the KM team alone without the much needed top management support.

ii. Lack of knowledge sharing culture among the various members of the organization

The majority of the employees, especially the middle managers, were quite reluctant to contribute to the content as they fear that if they share their knowledge with those who are competing with them for promotion, it may jeopardize their own chances of promotion. The “baby boomers” nearing their retirement also do not show much enthusiasm about spending their time updating the knowledge repository because they think they are “too old” to learn how to use the wiki.

iii. Lack of time

Although employees acknowledged the benefit of wiki, many were not visiting the portal as much as they wanted to because they lacked the time. Furthermore, many preferred to ask their peers for answers through emails, phone calls and text messages as they were deemed more convenient even though the accuracy of information may at times be questionable. This suggests that most of the employees favored the traditional face to face interaction as they can get a lot more information from the personal discussions with their peers and bosses rather than from the wiki.

iv. Reliability of the wiki

Staff often complained that at certain times of the day, the existing IT infrastructure was unable to support the high user traffic. Connectivity was also a major issue. The issues were further compounded by the fact that a number of complaints were made by employees especially from site personnel who faced difficulty accessing the wiki from remote areas that often relied on dial up internet connections.

v. Absence of incentives

Since there is no provision in the organization to allow the subject matter experts to be remunerated for their expertise, inputs and time spent on contributing to the wiki, this has more or less affected their motivation level to participate actively in the program. Furthermore, many experts felt that it was getting burdensome to respond to questions and issues posted by employees, and to act as moderators on a regular basis.

vi. Staff Turnover

Job rotation which is considered as a norm in any public organization, as a tool to enable the employees to learn new trades and share their experience with others at new places, unfortunately left vacuums of subject matter experts in the system that could not be filled immediately for obvious reasons. Initially the subject matter experts were chosen based on their expertise and experience. Identifying qualified replacements was difficult and can be time consuming.

vii. Heavy workload and timeliness

Subject matter experts have to sieve through torrents of information on a continuous basis to ensure relevant and fresh content is uploaded. This does not only require them to be knowledgeable in their area, but also to be cognizant of any new developments or changes that might have taken place after the original information was posted. In addition, these experts are often already overloaded with their own work and their involvement in the wiki initiative adds to their workload.

viii. Writing issues

Even though much of the wiki content is created based on existing work manuals or technical documents, subject matter experts were expected to provide their views and insights so as to help users understand the subject matter or issues better. However, more often than not, this was not done due to

difficulties in codifying their tacit knowledge. Some subject matter experts did try but due to their lack of writing skills, their efforts have instead caused quite a bit of confusion especially among the young professionals.

DISCUSSION

When the ecosystem factors were categorized into technical (hard) and organizational (soft), it was noted that only two of the issues relate to the technical factors while the rest relate to the organizational factors. The findings provide evidence to further support the studies of Hafez et al. (2010), Stewart and Sherif (2003), Serafeimidis and Smithson (2003) and Smithson and Hirscheim (1998) which found that many IT related projects failed because of their overemphasis on the technology at the expense of the organization's social, organizational and human factors.

The case study demonstrated that there are larger and hidden ecosystem issues that can significantly impact the wiki initiative for knowledge sharing, and how each problem interrelates to contribute their share to the whole problem. The effort to get support and the participation of the whole organizational members for the wiki failed. Without the support and contribution of the other organizational members to the issues and dialogs posted on the wiki portal, strain crept in. Consequently many of the subject matter experts felt it was getting burdensome to continue their roles actively. This would not have happened had the management been able to persuade experts with special common interest to volunteer to form communities and take ownership of the subjects.

The wiki design which provides; (i) the website that links all information on the organizational activities to the varied stakeholders, and, (ii) the facility for posting issues or information to get feedback were seen as limiting the knowledge sharing experience. The lack of additional provisions to systematically organize, record and re-evaluate issues, good and bad-practices, and so forth, tend to limit the quality and amount of knowledge that can be captured and organized for sharing, and which can be fed back into the organizational management system to encourage continuous organizational learning. At the onset of the project, it was assumed that the prevailing problems of knowledge silos, inconsistent practices and processes, brain drain and lack of knowledge sharing culture would be solved when the wiki is in place. This did not happen and finding effective solutions necessitates thinking beyond the realms of the wiki and its technology itself. It was obvious from the case study that the wiki is not the solution for organizations with inherent systemic knowledge sharing problems.

The research posits that one way to circumvent the issue is to study how existing generic IT models can potentially be adapted in the design of wikis to support knowledge sharing linked to the organizational ecosystem and flexible enough to incorporate elements unique to the organization itself. One model considering this is the Maturity Model offered by [Salleh et al. \(2010\)](#) as shown in Figure 1.

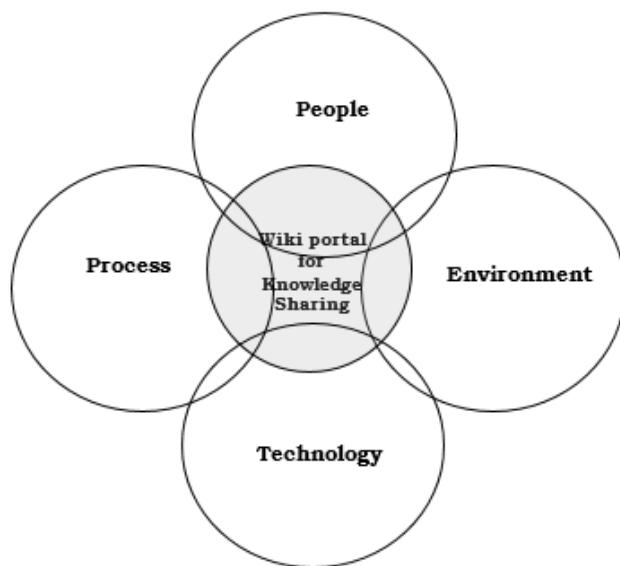


Figure 1. The maturity model ([Salleh et al., 2010](#))

The model suggests that there are elements external to the wiki portal that interrelate with and impact the wiki initiative. These interrelated elements are people, process, technology and environment. In applying the maturity model with the case study, it was suggested that the wiki initiative could have failed because of too much focus on technical performance alone. In the exuberance to exploit the IT systems, soft issues such as people, business process and work environment are treated as secondary elements and marginalized.

By integrating four key organizational elements namely technology, people, business process and environment together, the maturity model can serve as a useful tool to measure the organization's internal capability and readiness prior to any IT project implementation such wiki in the case study. Organizations will be able to measure the readiness gap using the proposed six progressive stages of maturity in order to develop the appropriate training programs in bringing the maturity level to the desired state (Figure 2).

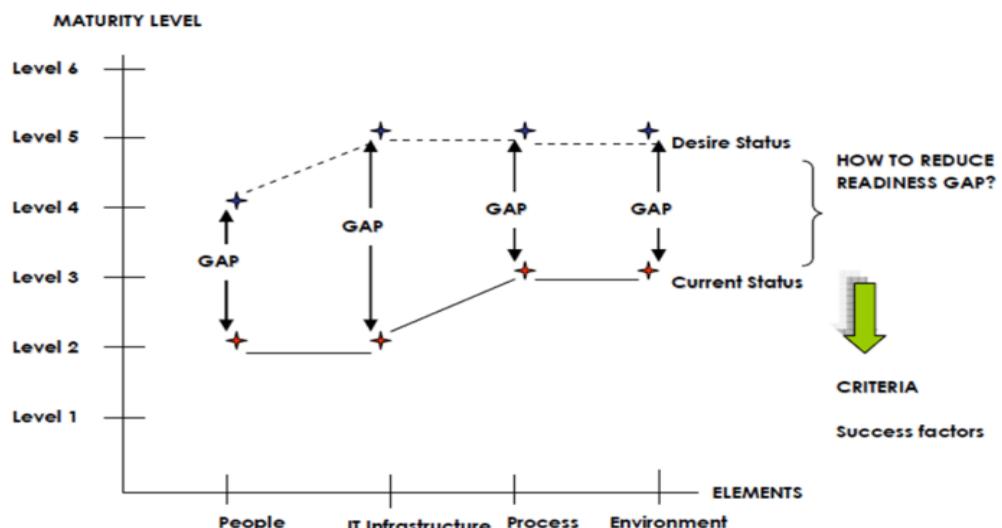


Figure 2. The Readiness Gap ([Salleh et al., 2010](#))

Consideration to establish the internal elements of people, process, technology and environment must be based on a careful and thorough deliberation of the organizational context. Decisions made without

proper and thorough evaluation will risk unwanted ecological imbalance to the whole initiative. The paper posits that there can be no “one size that fits all” to solutions of effective knowledge management tools and technologies. It is necessary for all the parties in the project to learn and relearn their organizational strategic, operational and organizational systems before the success of their knowledge management initiative can be effectively realized.

CONCLUSION

The case study provided useful examples of the complexity of maintaining a sustainable knowledge sharing initiative with the application of IT, and lessons that can be learnt for the future. The rise of technology-based applications such as wikis and blogs as knowledge sharing tools is proof that knowledge management and IT is now becoming more synonymous. Notwithstanding this, necessary measures must consider the technical and organizational factors that make up the organizational ecosystem to ensure effective implementation of KM initiatives.

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